

WHAT IS CLAIMED IS:

1. A thermal type flow measuring instrument comprising a sensing element for sensing an air flow, an electronic circuit electrically connected to said sensing element , and a frame- or box-shaped plastic casing component for accommodating and protecting said electronic circuit, said plastic casing component being a housing given as an injection molded part formed by integral molding together with a connector terminal which is extended from an inside to an outside of said plastic casing component while penetrating therethrough for electrical connection of said electronic circuit to an external device,

wherein said housing has a fixing portion molded with a metal plate inserted therein for attachment to a duct component serving as a passage through which a fluid to be measured flows, said metal plate being entirely or partially covered with a plastic, and an opening or a slot allowing only the plastic to pass through the same is formed in a plastic-covered portion of said metal plate.

2. A thermal type flow measuring instrument according to Claim 1, wherein said fixing portion given as a flange formed by integral molding with said metal plate inserted in the connector-terminal penetrating portion of said housing, and said metal plate has an opening through which said connector terminal penetrates and which is filled with the plastic, and has a hole filled with only the plastic.

3. A thermal type flow measuring instrument according to Claim 1, wherein said metal plate has an opening serving as a flow passage to introduce molten plastic from one surface to an opposite surface of said metal plate, or an opening or a slot interfering a flow of the molten plastic so that speeds of the molten plastics flowing along both the surfaces of said metal plate differ from each other during injection molding of said housing.

4. A thermal type flow measuring instrument according to Claim 1, wherein said metal plate has an opening or a slot acting to form a weld line of the plastics molded to form said housing in a position inside an outer periphery of said metal plate.

5. A thermal type flow measuring instrument comprising a sensing element for sensing an air flow, an electronic circuit electrically connected to said sensing element, and a frame- or box-shaped plastic casing component for accommodating and protecting said electronic circuit, said plastic casing component being a housing given as an injection molded part formed by integral molding together with a connector terminal which is extended from an inside to an outside of said plastic casing component while penetrating therethrough for electrical connection of said electronic circuit to an external device,

wherein said connector terminal has a sub connector terminal branched from said connector terminal, and said sub

connector terminal is extended in a portion in which a plastic molded to form said housing has a relatively large thickness.

6. A thermal type flow measuring instrument according to Claim 5, wherein said connector terminal is extended from the inside to the outside of said plastic casing component while penetrating therethrough, and said sub connector terminal branched from said connector terminal has a fore end remaining in a plastic molded to form said plastic casing component and not exposed to the exterior.

7. A thermal type flow measuring instrument according to Claim 5, wherein said sub connector terminal is formed at an inclination so that flow directions of molten plastics during injection molding of said housing differ from each other between an upstream side and a downstream side of said sub connector terminal.

8. A thermal type flow measuring instrument according to Claim 5, wherein said housing has a fixing portion molded with a metal plate inserted therein for attachment to a duct component serving as a passage through which a fluid to be measured flows, said metal plate being entirely or partially covered with a plastic, and an opening or a slot allowing only the plastic to pass through the same is formed in a plastic-covered portion of said metal plate.

9. A thermal type flow measuring instrument comprising a sensing element for sensing an air flow, an electronic circuit electrically connected to said sensing element , and a frame- or box-shaped plastic casing component for accommodating and protecting said electronic circuit, said plastic casing component being a housing given as an injection molded part formed by integral molding together with a connector terminal which is extended from an inside to an outside of said plastic casing component while penetrating therethrough for electrical connection of said electronic circuit to an external device,

wherein said housing includes a vent pipe extended along said connector terminal from an inside to an outside of said housing while penetrating therethrough, and a gate for injection molding of said housing is formed near an end of said vent pipe to flow a molten plastic parallel to a longitudinal direction of said vent pipe.

10. A thermal type flow measuring instrument according to Claim 9, wherein said housing has a fixing portion molded with a metal plate inserted therein for attachment to a duct component serving as a passage through which a fluid to be measured flows, said metal plate being entirely or partially covered with a plastic, and an opening or a slot allowing only the plastic to pass through the same is formed in a plastic-covered portion of said metal plate.

11. A thermal type flow measuring instrument according

to Claim 10, wherein a direction in which the plastic is injected from said gate is substantially perpendicular to said metal plate, and an extent of the injection is within a projected area of an opening formed in said metal plate, through which said connector terminal penetrates.

12. A housing constituting a thermal type flow measuring instrument according to any one of Claims 1 to 11.

13. An engine-control system comprising a thermal type flow measuring instrument according to any one of Claims 1 to 11, fuel delivery means, and a controller for controlling said fuel delivery means in accordance with a signal from said thermal type flow measuring instrument.